ARI Programme Management
A Training Course

PLANNING AND MONITORING ACTIVITIES

Programme for Control of
Acute Respiratory Infections

World Health Organization
1990

05783

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ARI Programme Management

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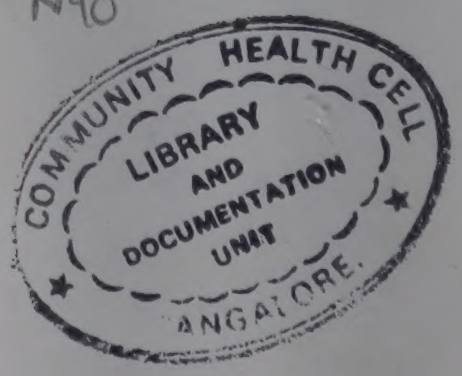

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PLANNING AND MONITORING ACTIVITIES

INTRODUCTION

In *National Policies* and *National Targets* you learned to specify objectives, strategies, subtargets, and a target for an ARI programme. This type of programme planning was compared to planning a journey, in which you decide on a general destination, select a means of transport, plan the stops along the route, and then predict your arrival at a specific destination.

But just planning your route, destination, and arrival time will not ensure that you complete your journey. First you must **start traveling**, and that involves many important tasks, such as packing your luggage, making reservations, buying tickets or servicing your automobile, etc. Then, as you travel, you must make your airline or train connection, keep your automobile filled with petrol, or do whatever else is necessary to reach each planned stop along your route.

Likewise, achieving your ARI programme objectives involves much more than simply specifying strategies, subtargets, and targets. The programme obviously has to do many activities to **get started and continue making progress.** This module is about:

* identifying these activities, and
* monitoring to ensure that they are done.

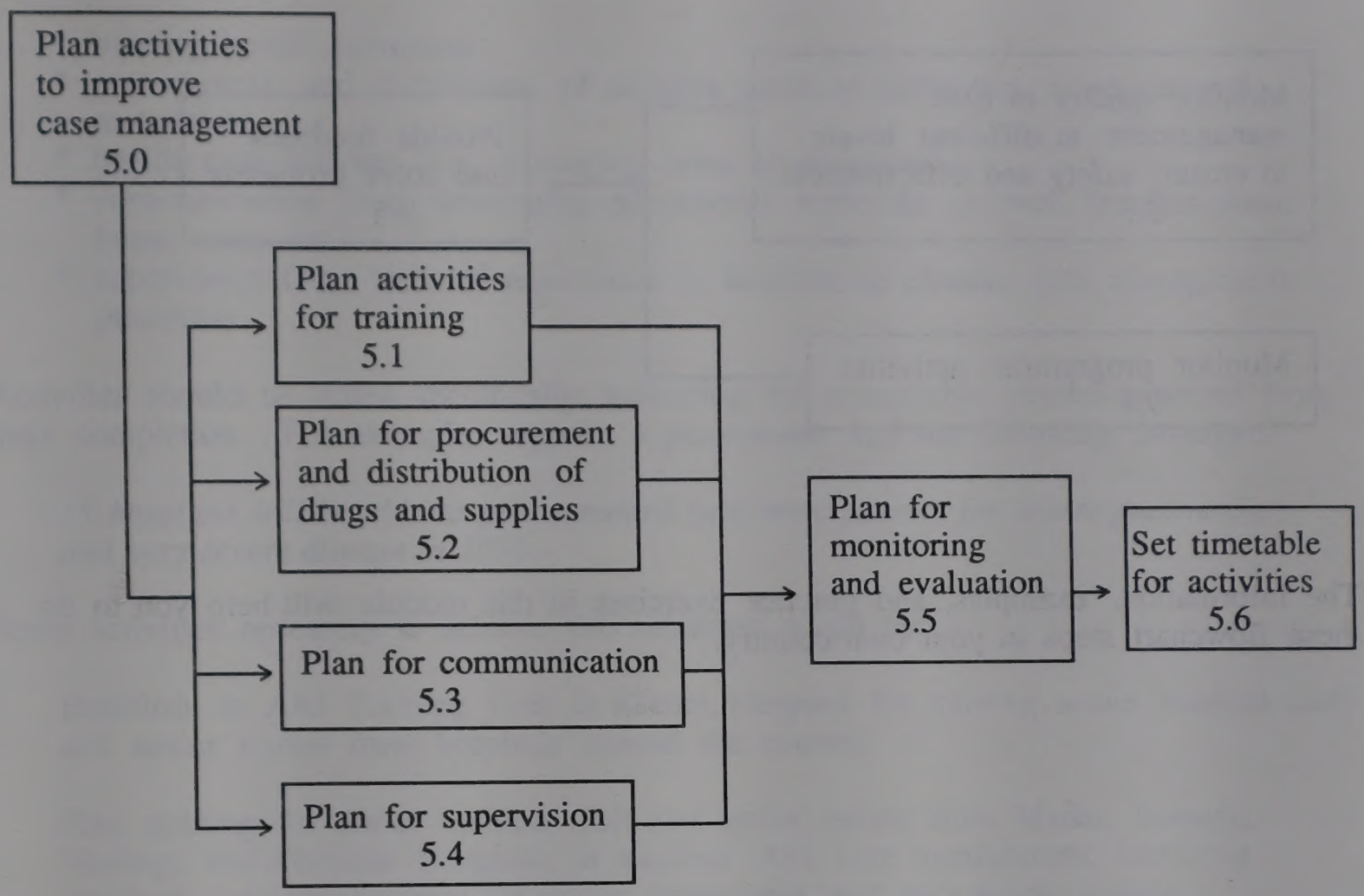
As used in this module, "monitoring" means regularly checking to see that programme activities are being done as planned. In a journey, monitoring might involve checking your automobile's petrol and oil levels, reconfirming your reservations, or checking to see if you are traveling within your budget. In managing an ARI programme, monitoring might involve reviewing training records to see if adequate numbers of appropriate staff are being trained, visiting health facilities to see if pneumonia cases are being managed properly, etc. Many other examples of monitoring will be given in this module.

You can understand why it is important to plan and monitor ARI programme activities. If you do not, you may have an impressive set of subtargets, but no results to show for them. Planning activities will help your staff know what to do (month by month, or week by week) to make the necessary progress towards subtargets and the target. Monitoring will help you follow this progress, identify any problems, give feedback to staff, and solve problems before they cause delays.

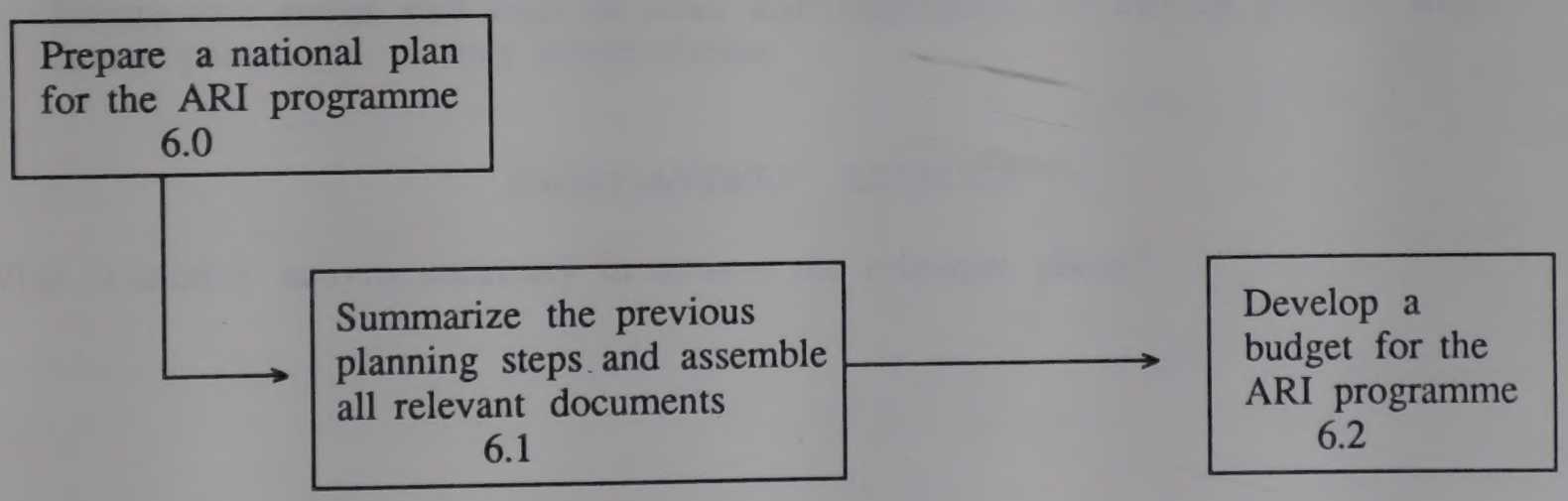
FLOWCHART AND LEARNING OBJECTIVE

The steps covered in this module are located in several different places on the flowchart:

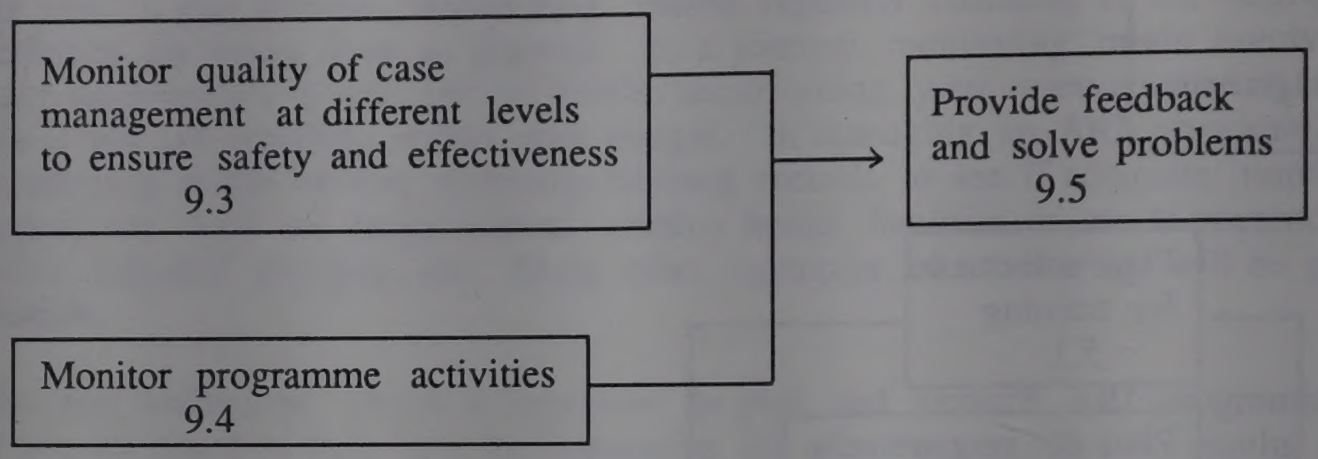
Planning Activities and Planning for Monitoring


Plan activities to improve case management 5.0
Plan activities for training 5.1
Plan for procurement and distribution of drugs and supplies 5.2
Plan for communication 5.3
Plan for supervision 5.4
Plan for monitoring and evaluation 5.5
Set timetable for activities 5.6

Preparing a National ARI Programme Plan


Prepare a national plan for the ARI programme 6.0
Summarize the previous planning steps and assemble all relevant documents 6.1
Develop a budget for the ARI programme 6.2

Monitoring


Monitor quality of case management at different levels to ensure safety and effectiveness
9.3
Provide feedback and solve problems
9.5
Monitor programme activities
9.4

The information, examples, and practice exercises in this module will help you to do these flowchart steps in your own country.

1.0 PLAN ACTIVITIES TO IMPROVE CASE MANAGEMENT

As used in this module, "activities" are major tasks which must be done by an ARI programme to achieve subtargets or to make other impacts on the health care system or the public's health-related knowledge, beliefs, or practices. Activities are often in the areas of:

* training health personnel,
* procurement and distribution of supplies (such as antibiotics or educational materials),
* health care delivery (e.g., managing cases of pneumonia),
* communication (e.g., developing educational materials to teach families about home care), and
* supervision (e.g., visits of supervisors to facilities to observe case management practices)

Activities should be stated specifically, indicating the measurable results expected from their completion. For example, suppose a programme had the following subtarget:

> *15 hospitals will be able to give standard case management for severe pneumonia and very severe disease in 1990.*

Some activities necessary to achieve this subtarget might be:

> Establish an ARI Training Unit at Kikuru Hospital for training senior medical staff and senior nurses from hospitals around the country.
>
> Plan training for senior medical staff and senior nurses from Madai, Ronsutu, Nadingi, and Gornata Hospitals in standard ARI case management including standard case management of severe pneumonia and very severe disease.
>
> Conduct training courses.
>
> Ensure that senior staff train all other staff responsible for treating patients with severe pneumonia or very severe disease.

SHORT-ANSWER EXERCISE

What is another activity necessary to achieve the subtarget above?

Possible Answer: Procuring drugs and equipment for the hospitals, such as oxygen, oxygen equipment, parenteral antibiotics and drugs and equipment for administering bronchodilators.

Examples of activities not directly related to achieving a subtarget might include actions to limit the use of some drugs, required national planning activities, feedback to staff of results of monitoring, or evaluation activities such as a household survey of ARI treatment practices.

This module will focus on planning activities necessary to achieve standard ARI case management subtargets like those discussed in the previous module, and on monitoring those activities. The same methods can be used to plan and monitor other activities.

Listing Tasks Involved in Activities

Once activities have been identified, it may be helpful to describe the specific tasks involved in doing these activities. (You will not need to list the tasks involved in ongoing activities that are already being done well, just the new and different activities.) Describe the tasks in as much detail as will be useful for your staff. Consult with staff as you develop your task list to make sure it is accurate and that no tasks have been overlooked. The list will be a useful tool for delegating work to staff and for monitoring that work.

EXAMPLE

Activity: Plan training for senior medical staff from Madai, Ronsutu, Ndingi, and Gornata Hospitals in standard ARI case management including case management of severe pneumonia and very severe disease.

Tasks: Budget and schedule the training.

Plan the training design (that is, the training methods and activities).

Select instructors.

Invite participants.

Obtain training materials, handouts, and other supplies (e.g., educational materials to be used for mothers).

Arrange for lodging, meals, and transportation.

Prepare instructors to conduct training.

EXERCISE A

For this exercise, you will be assigned to one of two small groups. Your subgroup will be assigned one of the subtargets below. For your assigned subtarget, your group will consider the information provided and will list on the worksheet on the following pages at least 2 activities and the tasks necessary to accomplish the subtarget. (Note: There are many possible answers for this exercise. Use your imagination if you are missing some information you need on the country.) Your subgroup should be prepared to discuss its answers with the rest of the group.

I. A subtarget for the next two years for an ARI programme that needs to increase its sources of pneumonia treatment and information on home care for ARI (stage 2) is:

In 1994, 50% of cases with pneumonia seen by community health workers will be treated (or referred, if appropriate) and advised on home care.

II. A subtarget for the next 2 years for another ARI programme that wants to have standard ARI case management in all health facilities in the country (stage 1) is:

25% of the population will have access to standard ARI case management at health facilities by the end of 1993.

"Access to standard ARI case management at facilities" in this country is defined as living within 5 kilometres of a health facility with supplies of standard antibiotics for pneumonia and staff trained in standard ARI case management. Approximately 5% of the country's health facilities now provide standard ARI case management, and 7% of the population has access to these health facilities. The ARI programme obtains antibiotics through the system managed by the Essential Drugs Programme.

Tell a facilitator when you are ready to begin this exercise.

WORKSHEET FOR EXERCISE A

Assigned Subtarget:

Activity:

Tasks:

Activity:

Tasks:

WORKSHEET FOR EXERCISE A, CONTINUED

Activity:

Tasks:

Activity:

Tasks:

1.1 Plan Training

Training is one of the largest and most important components of an ARI programme since every supervisor and health worker must have good training. Good training is critical to achieving standard ARI case management throughout the country.

Training-related tasks will be carried out by many different individuals and will require coordination of extensive resources spread over the entire country. Detailed planning is required to be sure that sufficient staff will be trained effectively and in the timeframe needed. Planning training involves looking at the many different types of workers in a country to be trained, the numbers of each type of worker, the training methods and materials to be used, and how the training can be supported.

EXAMPLE The manager of an ARI programme developed the worksheet on the next page to help him plan for training in his country in 1990.

Note that this worksheet is completed for one region of the country. The ARI manager met with the supervisor of the Valen Region for assistance in completing this worksheet. He plans to meet with his other regional supervisors to complete a worksheet for each of their regions. He will use the results from all meetings to develop an overall training plan for the country.

Based on these plans for the region, the regional supervisor will work with supervisors from lower levels to plan details of individual training sessions, for example, the dates, times, and places for the sessions, and names of participants. He will also prepare a training budget worksheet showing the days per course, cost per day, cost of equipment and materials, speaker's fees, etc.

Who Needs to be Trained?

Procedures for managing patients with ARI vary at different levels of the health system and depend on the programme's policies, training of staff and the drugs and equipment available. Training for every doctor, nurse and other health worker must teach the case management procedures appropriate for his or her work situation and level of responsibility. Depending on the stage of the programme, some of the following groups of health staff will need training. In planning the training, it is important to determine how many staff in each of these groups need to be trained.

* Doctors, nurses and other staff in health facilities need to be trained in standard ARI case management procedures (described in the ARI treatment charts and in the module *Management of the Young Child with an Acute Respiratory Infection*).

* Doctors and nurses in hospitals need to be trained in standard ARI case management procedures including standard case management of severe pneumonia and very severe disease (as described in *Acute Respiratory Infections in Children: Case Management in Small Hospitals in Developing Countries - A Manual for Doctors and Other Senior Health Workers*).

WORKSHEET FOR PLANNING TRAINING

Year: 1991 Date Completed: November 1990

Region: Valen

Categories of personnel to be trained	Current number in region	Type of training needed	Number now trained	Number needing training	Training method(s) to be used	Number of days	Number that can be trained per course/ seminar	Number of training courses/ seminars needed	Where training should be done	Funding sources	Number of courses/ seminars to be conducted in next year	Number to be trained in next year	Printed materials to be used (title and number)
Clinic doctors and nurses	500	standard ARI case management	25	475	case management module with additional clinic experience	3	20	24	larger clinics	Regular budget,	5	100	WHO/ARI case management module
Hospital outpatient department doctors and nurses	100	standard ARI case management	8	92	case management module with additional supervised practice at OPD	3	20	5	OPDs in each province hospital	WHO, + UNICEF	3	60	WHO/ARI case management module
Hospital staff who treat severe pneumonia	200	standard ARI case management including case management of severe pneumonia and very severe diseases.	0	200	Review guidelines, discussion, rounds, practical work	5	15	13	larger hospitals		2	30	WHO small hospital manual WHO/ARI Training Unit Materials
Provincial supervisors	20	supervisory training	0	20	formal courses, in. service training	8	20	1	provincial headquarters	WHO	1	20	WHO/CDD Supervisory Skills Course, with ARI case management module
District level Supervisors	200		0	200		8	30	7	district meeting centres		3	90	
Other staff who supervise	50	supervisory training	0	50	formal courses, in. service training	8	30	2	district meeting centres	WHO	0	0	WHO/CDD Supervisory Skills with ARI module

* Community-based practitioners need to be trained to recognize and treat pneumonia and to teach mothers how to care for a child with ARI.

* Traditional birth attendants or other community-based practitioners who come in contact with young infants need to be trained to recognize young infants who are ill and need to be taken to a health worker.

* Doctors in large hospitals need to be trained in specialized diagnosis and treatment of cases that have not responded to standard ARI case management.

An essential part of standard ARI case management is teaching the patient's mother. She must be taught:

- how to care for the child with ARI at home, (see box below)
- how to administer any antibiotics or other medication, and when to bring the child taking antibiotics to the health worker for reassessment.

Therefore, training for all categories of health staff who will do standard ARI case management must include **what** to teach and **how** to communicate with the mother to be sure she has learned what to do.

▶*Advise Mother to Give Home Care* *(For the child age 2 months up to 5 years)**

▶ **Feed the child.**
- ▸ Feed the child during illness.
- ▸ Increase feeding after illness.
- ▸ Clear the nose if it interferes with feeding.

▶ **Increase fluids.**
- ▸ Offer the child extra to drink.
- ▸ Increase breast-feeding.

▶ **Soothe the throat and relieve the cough with a safe remedy.**

▶ **Most important: In the child classified as having No Pneumonia: Cough or Cold, watch for the following signs and return quickly if they occur:**
- ▸ Breathing becomes difficult.
- ▸ Breathing becomes fast.
- ▸ Child is not able to drink.
- ▸ Child becomes sicker.

This child may have pneumonia.

* *See section on young infant for home care instructions for that age group.*

The ARI programme should not try to train all these groups simultaneously. As described in the stages, staff in health facilities, hospital outpatient departments and hospitals should be trained first, so that people will have access to standard ARI case management. In some countries, it may take a few years to train staff in all facilities. Later in the programme's development, community-based practitioners would be trained. Even later doctors in well-equipped facilities would be trained in specialized diagnosis and treatment.

The ARI programme may have needs for training in addition to training in standard ARI case management:

* Supervisors need to be trained to supervise health workers.

* Staff responsible for activities such as drug distribution may need special training for their jobs (if they are not being trained otherwise, for example, by the Essential Drugs Programme).

* Managers need to be trained to plan, monitor and evaluate ARI activities.

How Will They Be Trained?

Health staff will learn best when they are given information about ARI and standard ARI case management, are shown examples of different kinds of cases and correct treatment, and are given opportunities to practice managing cases with guidance as needed.

The table below shows common training methods used to provide information, examples and practice.

TO PROVIDE:	USE METHODS SUCH AS THE FOLLOWING:	IN WHICH THE LEARNER PARTICIPATES BY:
information	written or oral instruction reading assignments in text book or reference materials lectures	hearing or reading
examples	demonstrations pictures or slides written examples films	seeing
practice	role play exercises supervised practice in real work situations written exercises	doing

LESS ACTIVE ↑ ↓ MORE ACTIVE

SHORT-ANSWER EXERCISE

1. Health workers need to be trained to do many tasks. One task is teaching mothers to watch for signs that they should bring their children with ARI back to the health worker quickly. Following are some ways to train health workers to teach this to mothers. Beside each method, state whether it provides information, an example, or practice.

Methods	Information, Example, or Practice?
a. Have health workers role play teaching mothers.	a.
b. Point out children who visit who have difficult or fast breathing.	b.
c. Give the health worker a list of the signs a mother should look for (i.e., difficult or fast breathing, not able to drink, child is sicker).	c.
d. Describe difficult or fast breathing.	d.
e. With a supervisor observing, have health workers teach real mothers.	e.
f. Demonstrate teaching a mother.	f.

2. Which of the above methods would you use first in a training session? Why?

3. Which method would you use last? Why? In what order would you use the six methods?

4. Which method is closest to the health worker's real job?

Answers:

1. a. practice
   b. example
   c. information
   d. information
   e. practice
   f. example

2. Method "c" would be first because this basic information is needed before health workers can fully understand examples or do practice.

   Method "f" is another possible answer, if the trainer would like to start more actively and feels the health workers can grasp the information easily from the demonstration. After the demonstration, however, the list of signs should be distributed.

   Method "d" is another possible answer, if the trainer would like to teach health workers about difficult and fast breathing before introducing the task of teaching mothers about these signs.

3. Method "e" would be last because health workers should be fully prepared before practicing with real mothers. An effective sequence of methods for this training would be:

   c. Give the health worker a list of the signs a mother should look for (i.e., difficult or fast breathing, not able to drink, child is sicker).

   d. Describe difficult or fast breathing.

   b. Point out children who visit who have difficult breathing.

   f. Demonstrate teaching a mother.

   a. Have health workers role play teaching mothers.

   e. With a supervisor observing, have health workers teach real mothers.

   There are other sequences that could be effective, as mentioned in the answer to question 2. However, in any sequence the last steps should be role playing teaching mothers, followed by supervised practice teaching real mothers.

4. Method "e"

The national manager should have a training specialist review or prepare instructional materials and trainer's guidelines. The training specialist should ensure that the training will be correct and consistent, and that it will emphasize practice of standard ARI case management as it should be performed by the health worker being trained.

EXERCISE B

On page 19 is a Worksheet for Planning Training to complete for your own programme. Use what you know about your programme and any information you brought to this course. If you do not have data you need, try to make estimates.

Write brief answers to the questions below to get started.

1. Given the stage of your programme, what categories of personnel are most important to train now?

2. What level of case management will each category of personnel need to do (e.g., standard case management of pneumonia only, case management of severe pneumonia and very severe disease)?

3. It is better to use more active training methods, although some reading or listening to instructors will be necessary. Can demonstrations and practice be a major part of the training for each type of worker? Where can training be conducted to make demonstrations and practice possible?

4. What training materials does your programme have now? Do they describe case management procedures appropriate for each type of worker? Are they consistent with WHO recommendations for standard ARI case management? Do you need to revise your training materials or obtain additional ones?

Talk with a facilitator when you have completed the worksheet.

1.2 Plan for Communication

Communication is another important component of an ARI programme. In these modules, the term "training" refers to teaching for the purpose of improving the behaviour of health workers, while the term "communication" refers to teaching for the purpose of changing the behaviour of family members. Messages can be communicated orally from person to person, through printed text and pictures such as in pamphlets or posters, or through mass media such as radio and television.

One aspect of communication in an ARI programme was mentioned in the section on training. There it was pointed out that health workers need to be trained to teach (communicate with) mothers about care for a child with ARI at home and use of antibiotics. It is particularly important that health workers teach mothers when to seek care from a health worker and to quickly seek care as soon as a child needs it. Most deaths from pneumonia occur quickly. Therefore, deaths can be prevented only if mothers know to bring sick children promptly.

This face-to-face communication between health workers and mothers is important from the beginning of the programme. ARI programme managers will want to develop other communication activities also, especially when the emphasis of programme activities is reaching all families to teach them about home care of ARI (stage 3).

The public health communication design process

The design of an effective communication component in any social programme follows the same basic steps. These steps are interdependent and should follow each other in cycles throughout the life of an ARI programme.*

Step 1 Investigate: get a good understanding of your audiences and the problems to be dealt with before planning

Step 2 Plan communication activities: use results of investigation to set objectives for communications and develop an approach to reach families

Step 3 Develop materials to be tested

---

* *Communication: A Guide for Managers of National Diarrhoeal Disease Control Programmes* provides a thorough description of these steps, which can be adapted for an ARI programme.

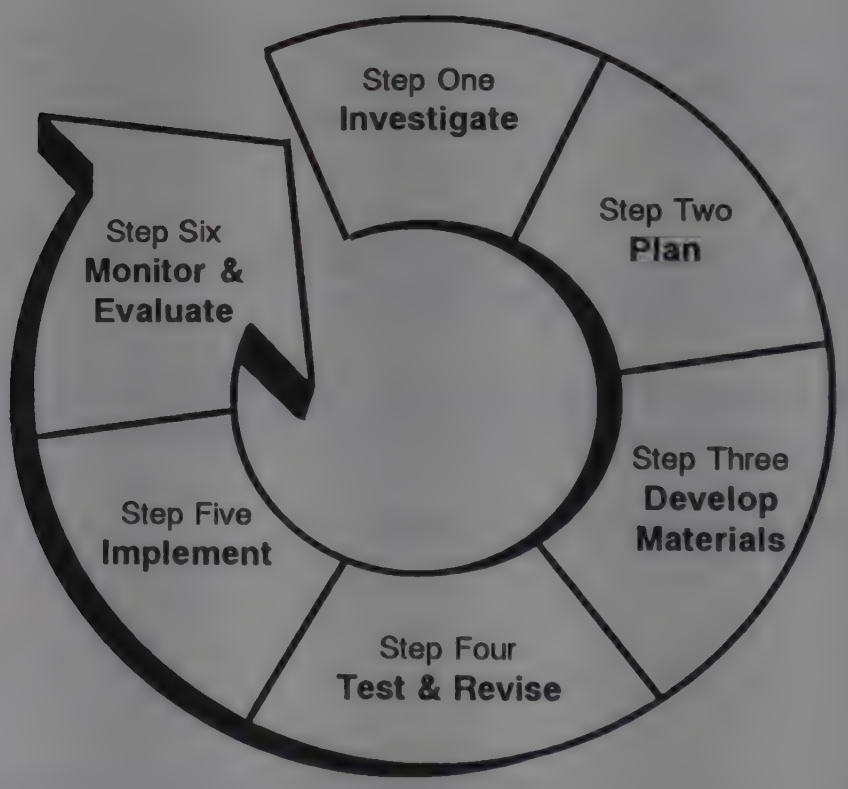
Step 4 Field test materials under operational conditions, and revise as needed. Try out materials first with a sample of the audience before full-scale implementation

Step 5 Implement the plan

Step 6 Monitor and evaluate the implementation phase to detect problems or unexpected obstacles and determine actions needed.

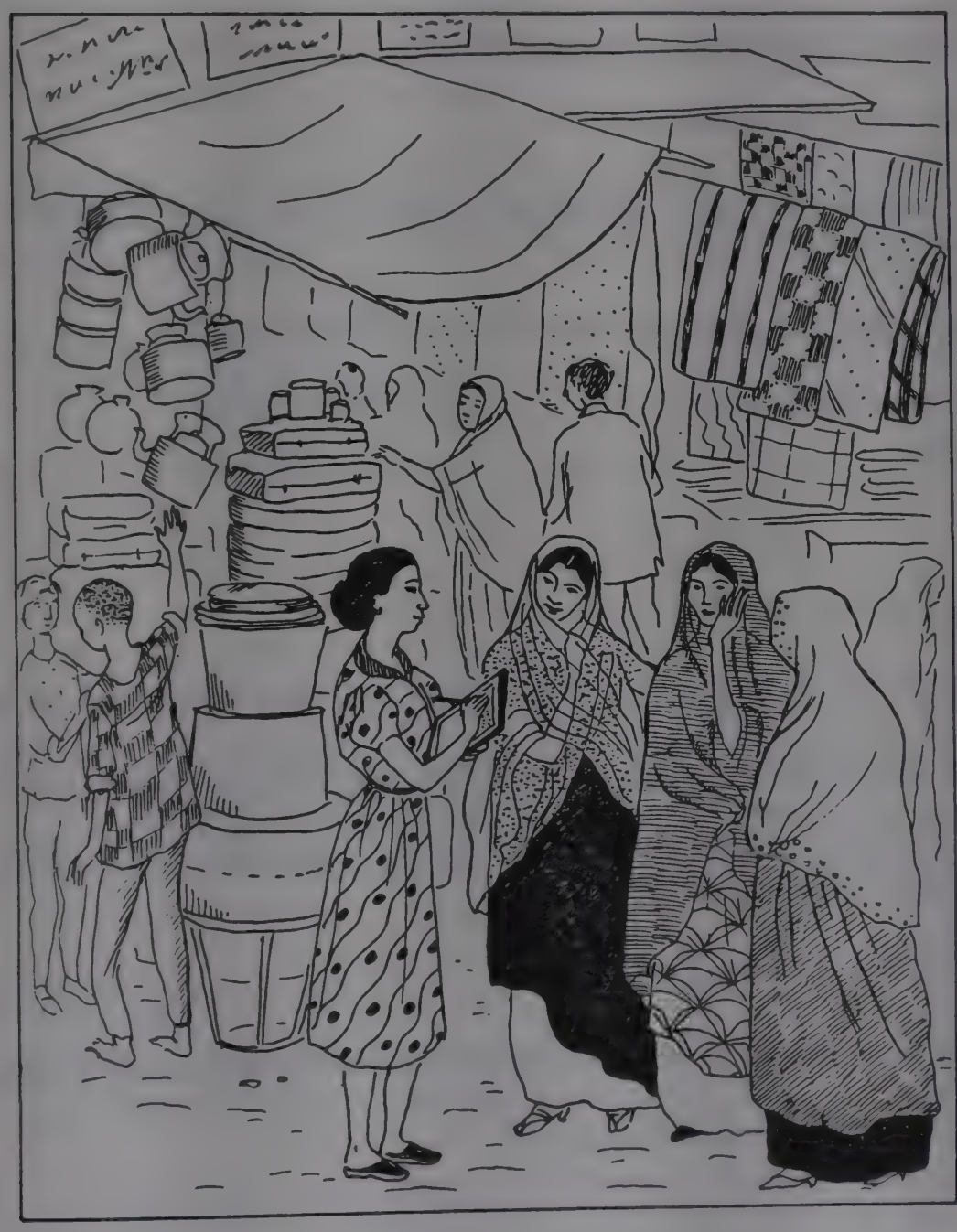
Temptation is strong to let the communication steps follow each other at their own pace, separately from the rest of the programme. However, communication activities play a supportive role in ARI programmes only if they coordinate with the overall timetable. For example, training of health staff, distribution of antibiotics, and communication activities must be planned together, so that mothers learn about a service which providers are trained and equipped to give.

The Communication Design Process



Step 1 - Investigation

A list of questions about the knowledge, beliefs and practices of families was provided in the module *National Policies* (and is repeated on the next page). The answers to those questions were considered when developing policies for the programme. The answers are also used for planning communication between health workers and mothers. Messages for mothers and other caretakers need to be developed which will be clear, acceptable and even appealing, if they are to be understood, remembered and followed.



ARI KNOWLEDGE, BELIEFS AND PRACTICES OF FAMILIES

Education and Income

* What is the range of education and income among the caretakers?
* What is the literacy rate among the caretakers?

Knowledge and Beliefs

* Are pneumonia, cough and difficult breathing recognized as a problem by mothers? Do mothers know that pneumonia can kill their children?
* What signs of pneumonia are families able to recognize?
* Is there a word for pneumonia?
* How do mothers interpret the words used for the signs of pneumonia, such as difficult breathing, fast breathing?
* What treatment do mothers want for a child with ARI?
* How do families recognize that a young infant is sick?

Practice

* How do families currently treat ARI in the home?
* What do people buy to treat ARI? What are they being told by sellers?
* Who are the usual providers of treatment for cough or pneumonia?
* When do people seek treatment beyond the home for ARI? What is the timing and sequence of careseeking?
* Are young infants brought for care?
* What are the most common treatments, including drugs, for pneumonia?
* What are constraints to careseeking?

Investigation of some additional questions such as those below may be needed to design messages for mothers, or may be needed later when print materials are developed. Methods for carrying out these investigations were described in the module *National Policies*. When a programme is planning activities to teach all families about home care for ARI (stage 3) and is planning use of mass media, additional investigation is needed to find out about the most credible and widespread sources of information.

* What mass media reach the people (for example, radio, television, newspapers, posters)? When do people watch television or listen to radio? What newspapers are widely read? Where are people most likely to notice a poster?

* Which mass media are most credible?

* Are there recent examples of people responding to mass media campaigns (for example, an immunization campaign)?

* Where do people obtain health-related information (for example, from the radio, health facility, parents, grandparents, traditional healers)? Whose health advice do they believe the most?

* Who has strong influence on the users' behaviour (for example, parents, husbands, religious leaders, movie stars)?

* Are there recent examples of people changing a behaviour? What caused the change?

Step 2 - Plan

A written communication plan will guide the ARI communication activities. When it is first written, the plan is broad. It states clear and feasible goals and the primary means to achieve those goals. It is meant to be adjusted over time as more information on the audience is obtained through investigation of the audiences, pretesting of communication materials, and monitoring.

Step 3 - Develop Materials

After drafting the communication plan, the next task is to prepare the educational messages and materials. These could include:

* Printed materials and visual aids such as flyers, posters, flipcharts, comic books, etc. These will include materials to be used in interpersonal communication with mothers, community leaders, and community-based practitioners.

* Promotional materials, such as an ARI logo.

* Mass media materials, such as radio and television spots and programmes.

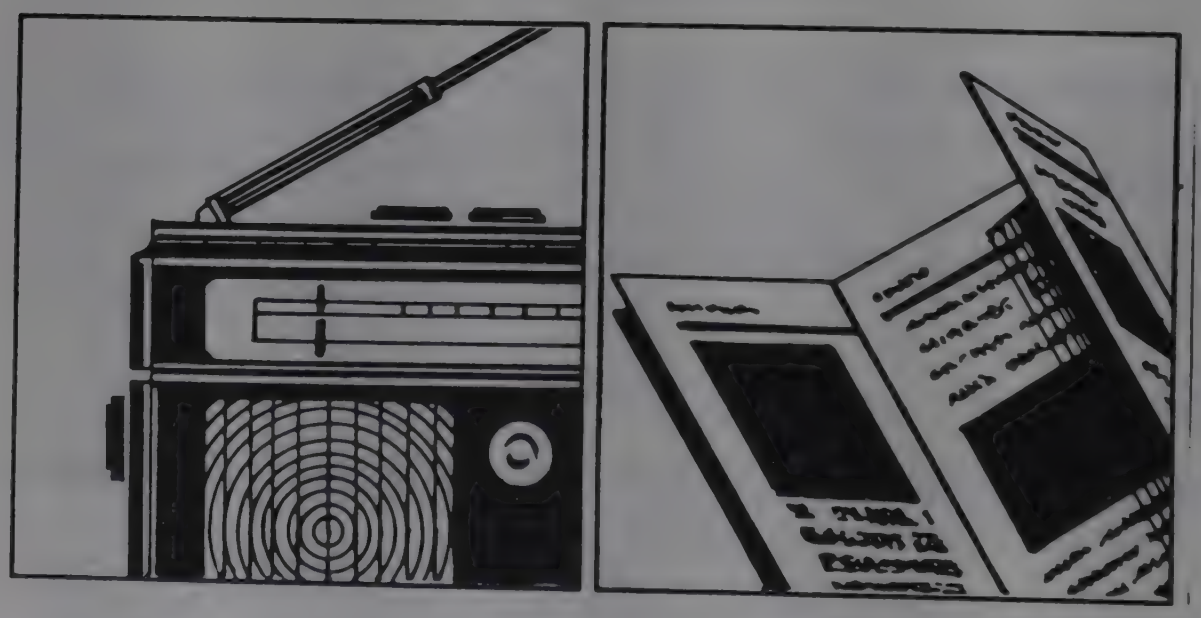
Communication materials should be appropriate to the emphasis of the programme:

* While emphasis is on increasing access to and use of standard ARI case management in health facilities, communication materials might be mostly visual aids and printed materials that will help the health workers in their communication with mothers.

* When the emphasis is on increasing the knowledge of all mothers, mass media messages may teach mothers about home care and promote use of the health services.

Step 4 - Test and Revise

The materials and products are tested with representatives of the target audience to ensure that they are understandable, appropriate, and attractive. Testing should be systematic. Asking just one or two people is not enough. Some of the methods used for the initial communication research are equally appropriate for testing materials with the target audience.



Step 5 - Implement

Coordinating communication activities with other ARI activities is essential. Important issues during implementation are:

* Media mix

  Media mix is the term used by communication planners to define the combination of media (or channels) used to deliver messages, such as face-to-face, print, radio, television, etc.

* Message phases

  Not all messages should be delivered at once. Phasing messages wisely can increase impact and save money. For example, the first messages would be those which are absolutely necessary for mothers, for example, teaching the signs that children with ARI need to be brought to a health worker and convincing mothers to try the health facility.

* Message design

  In public health communication, message design is the art of highlighting the benefits the audience will receive for adopting a new behaviour or technology, so the benefit will seem to outweigh the costs of adopting it.

Step 6 - Monitor and Evaluate

Monitoring of communication generally includes examining messages and materials during their development, communication inputs (e.g., pamphlets produced and distributed), and communication results (e.g., changes in knowledge and practices of the target audience).

Monitoring of communication activities requires frequent measurements. It aims at understanding why certain things are not happening and at finding solutions with the target audience. It is usually undertaken as a part of monitoring all programme activities (see pages 42-44).

Evaluation is carried out less frequently than monitoring. On the next page is an example of a problem identified by communication monitoring and evaluation and solutions that might be used to overcome it.

Monitoring and evaluation will indicate actions needed. These actions may include investigation of certain questions, new plans, or changes in plans or activities to correct problems.

Problem	Possible causes	Proposed communication solutions
Target audience is not performing desired behaviour even after communication intervention, i.e., they are not bringing children with ARI to health facility	It is difficult for families to reach the health facility.	Not a communication problem. Perhaps train community-based practitioners to care for children with ARI, so care will be available closer to families.
	Families do not know when to bring a child with ARI to a health facility.	Redesign messages to make criteria for seeking care more clear to families.

EXERCISE C

Review the questions about families and ARI on pages 24 and 25. Then answer the questions below.

1. On which of these questions do you already have reliable information? Write a tick (✓) beside each question for which you have enough information.

2. Who in your country is knowledgeable and may be able to provide information on some of the rest of the questions? Consider individuals or groups who have worked with families. How could you obtain information from them?

3. For each question that you hope to find out about from knowledgeable sources, write the possible source on the list beside the question.

4. Which questions remain? Special studies may be required to learn about these. Where might assistance be available to help design and carry out such studies (e.g., universities, other sections of the MOH, international agencies)?

When you have completed this exercise, talk to a facilitator.

1.3 Plan for Procurement and Distribution of Drugs and Supplies

The supplies that will be needed for standard ARI case management at a health facility are listed below.

Ingredients for soothing remedy or a cough medicine made and distributed by the Ministry of Health (or purchased by the Ministry of Health for use at health facilities)

Small bottles to hold remedy (many)

Timing device

Antibiotic supply:
If oral antibiotic is chosen:
Antibiotic tablets or powder for oral suspension
Envelopes for dispensing tablets

or

If procaine penicillin is chosen:
Vials of procaine penicillin
Matching quantities of:
Sterile water for injection
Sterile syringes: 5 ml
Sterile 20 gauge needles
Cotton swabs
Alcohol or spirit

Paracetamol tablets

Register

Referral forms

Cloth wicks

Acute Respiratory Infections in Children: Case Management in Small Hospitals in Developing Countries - A Manual for Doctors and Other Senior Health Workers lists the supplies needed at a hospital for case management of severe pneumonia or very severe disease.

Other supplies at the health facility or the hospital (depending on the policies of the ARI Programme)

Supplies for management of wheezing:

Oral salbutamol: 2 mg tablets or syrup

If nebulized salbutamol:

Liquid salbutamol 5 mg/ml

Footpump nebulizer (or electric air compressor)

Oxygen tubing

Pediatric oxygen mask

Sterile water

OR

If metered-dose inhaler:

Metered-dose inhaler

Spacing device

Supplies for management of ear infection:

(additional quantities of antibiotics need to be ordered)

Cloth wicks (for use in clinic)

Pneumatic otoscope; batteries; ear speculum

Supplies for management of sore throat:

Tongue depressors, flashlight

Benzathine penicillin (vials) or oral penicillin

(plus matching sterile water, needles, syringes)

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1.3.1 Coordinate with the Essential Drugs Programme for Procurement and Distribution of Drugs and Supplies

Since drug logistics systems involve many programmes other than ARI, it is not desirable for ARI to establish its own system for distribution and storage of drugs. Furthermore, the antibiotics used by ARI are also used by other programmes for other diseases. Logistics is best managed as a coordinated, centralized activity. In many countries there is an Essential Drugs Programme (EDP) which is responsible for a logistics system to support various programmes such as ARI, diarrhoeal diseases control, maternal and child health, and the expanded programme on immunization.

What does a good drug logistics system do?

A good drug logistics system assures that the programme has a regular supply of the required quantities of appropriate drugs. For an ARI programme this would include the following elements:

1. determination of quality standards for the drug,
2. determination of quantities and pharmaceutical formulation required,
3. determination of packaging, shipment, and scheduling requirements,
4. comparing of potential suppliers in terms of price and quality,
5. selection of supplier,
6. establishment or maintenance of storage facilities,
7. receipt of drugs,
8. storage at central level,
9. shipment to regional levels of appropriate amounts at agreed upon intervals,
10. shipment by regional levels to other points, including health care delivery points,
11. monitoring of quality and quantity of drugs at all points,
12. reordering in sufficient time so that stocks do not run out,
13. periodic evaluation of overall logistics system.

How should an ARI Programme collaborate with a national Essential Drugs Programme?

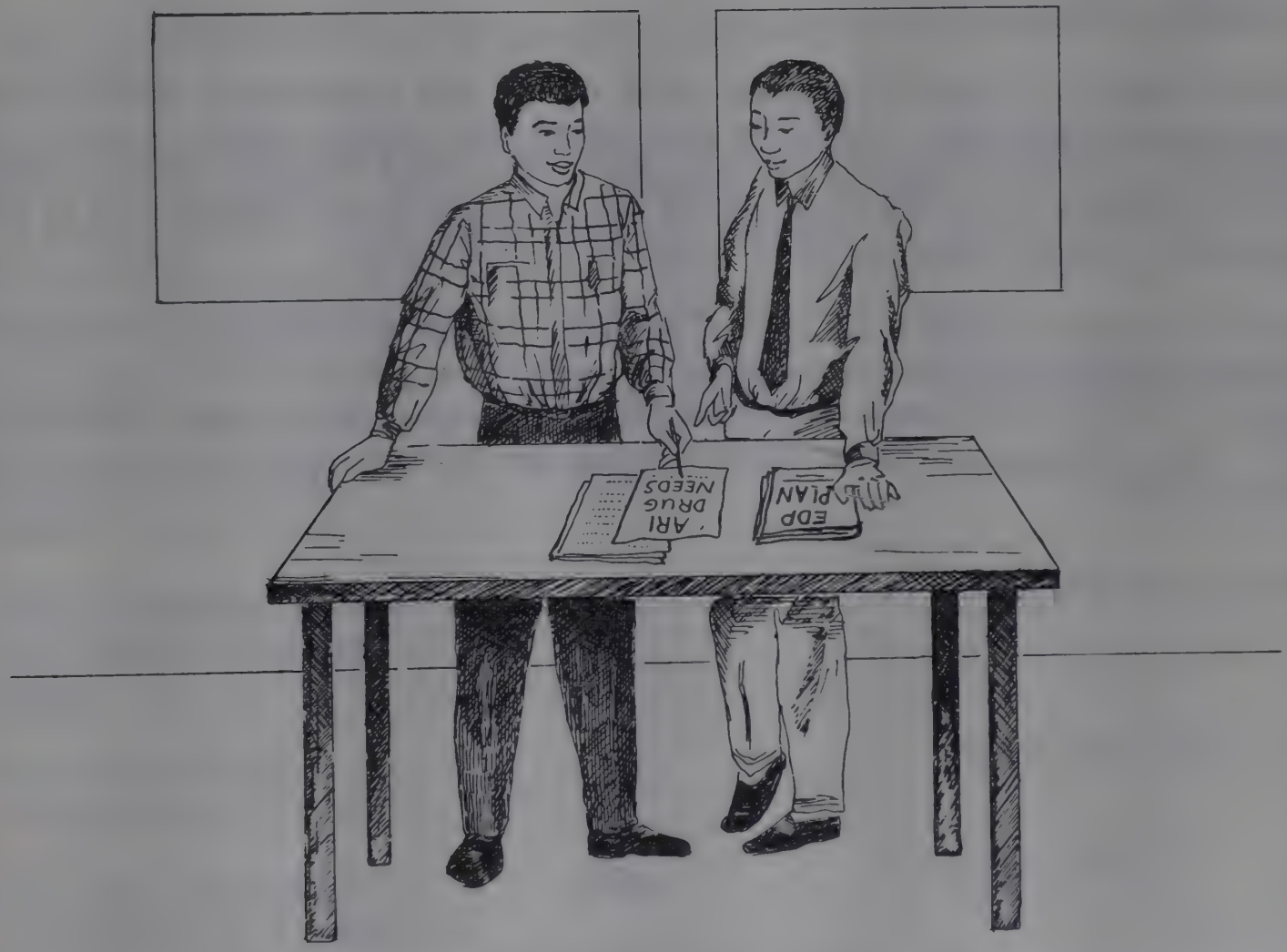
An EDP established using guidelines similar to those developed by WHO generally is responsible for increasing access of the population to those drugs that are most effective

in preventing or treating the major causes of morbidity and mortality in the country. This is done by giving priority to these drugs over drugs that are less effective. Government purchases of drugs, as well as the public (and in some countries the private) promotion of drugs, place the highest priority on those which are most important. This means limiting the manufacture, importation, advertising, distribution, prescription, sale, and use of less important drugs.

An ARI programme can collaborate with EDP in a number of ways. First, it needs to advise EDP of those drugs, particularly antibiotics, which will be the recommended standard drugs for the treatment of pneumonia and other respiratory infections. EDP can then see that these drugs are purchased.

Second, it needs to advise EDP which drugs currently being used for ARI are *inappropriate*, so that EDP can act to limit their availability.

Third, the ARI programme should determine the quantities and formulations of drugs that trained providers will need to treat pneumonia (and other ARI). They should inform EDP of these needs and periodically adjust these amounts as the programme's needs increase. EDP can then assure that sufficient and appropriate drugs will be available for the ARI Programme.



Fourth, ARI should carefully monitor logistics activities, including whether the appropriate drugs in the desired formulations are reaching health staff. When necessary, the ARI programme should work with EDP to resolve problems such as shortages of antibiotics, delays in shipment, or continued availability of inappropriate drugs.

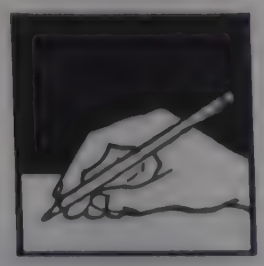
In many situations when health facilities begin following the WHO standard ARI case management guidelines, smaller quantities of antibiotics will be needed for treatment of ARI. Health facilities may in fact find that they no longer run out of antibiotics in the middle of the month, since the amounts received are sufficient when standard case management guidelines are followed. However, as time goes on it is important to make sure that these smaller amounts continue to be available for pneumonia cases (that is, they will not be used for colds or other illnesses where they are not needed). The Ministry of Health should provide sufficient antibiotics for treating other priority illnesses that require antibiotic therapy.

1.3.2 Calculate the amount and costs of antibiotics for pneumonia treatment for an initial order.

The worksheet that follows will give an estimate of the quantities and costs of drugs to order to treat pneumonia. It is based on the programme's target for the proportion of all childhood pneumonia cases who will be treated with standard antibiotics or receive referral care for severe pneumonia by a trained, regularly supplied provider (overall pneumonia treatment rate).

This calculation is for an initial order based on the ARI programme's planned activities for pneumonia treatment. Needs for paracetamol and cough mixtures should also be calculated. If it is the policy of the programme that health facilities will use antibiotics for ear infections, order the same amount for treatment of ear infections as in the past. Eventually a system based on actual need can be developed.

The total amounts required for trained providers should be communicated to the Essential Drugs Programme or whatever government unit is responsible for overall logistics. They will be added to the requirements of other programmes for these and other drugs. Subsequent orders should replace the amount used during the previous supply period.



EXERCISE D

In this exercise you will estimate the amount of 4 different antibiotics that will be needed for treating pneumonia and estimate their cost.

Use the following information to complete the worksheet for Ventura.

* It is the end of 1990. The programme manager is estimating drug needs so that he can inform the Essential Drugs Programme.

* The population of Ventura is about 25 000 000. About 15% of the population is under 5 years of age.

* The programme manager set a target for 1992: 26% of the country's population will have access to standard ARI case management at health facilities and referral care. He estimates that about 50% of the cases of ARI with access would receive standard ARI case management in 1991-92. Therefore, 13% of all childhood pneumonia cases (0.26 x 0.50) would be treated (that is, will receive standard antibiotics or referral care for severe pneumonia).

* Based on a household survey, the annual incidence rate of childhood pneumonia is 150/1000.

A university medical school study estimated the distribution of childhood pneumonia cases by age and severity. Using these estimates and the drug policies and guidelines of the ARI programme, the programme manager compiled the following information. (Note that the total may equal more than 100% of cases since some cases will first be given standard case management of pneumonia and then referred.)

Category	Proportion of Cases	Recommended Drugs
Pneumonia in children 2 months up to 5 years	0.64	cotrimoxazole
Severe pneumonia or very severe disease in young infants	0.20	benzyl penicillin, gentamicin
Severe pneumonia (2 months up to 5 years)	0.16	benzyl penicillin
Very severe pneumonia (2 months up to 5 years)	0.04	chloramphenicol

WORKSHEET

ESTIMATING DRUG NEEDS AND COSTS FOR TREATING PNEUMONIA

A. ESTIMATE THE NUMBER OF CHILDHOOD PNEUMONIA CASES OF ALL DEGREES OF SEVERITY TO BE GIVEN TREATMENT
(includes cases of pneumonia, severe pneumonia, very severe pneumonia, and young infants with pneumonia or very severe disease)

A-1 Estimate the number of children under 5 years.

_____	x	_____	=	_____
population of the country		proportion of the population under 5 years		number of children in the country*

A-2 Estimate the expected cases of pneumonia.

_____	x	_____	=	_____
number of children in the country		incidence of pneumonia in children		number of childhood pneumonia cases

A-3 Estimate the number of childhood pneumonia cases who will be treated at a health facility, hospital, or by a community-based practitioner. Use the overall pneumonia treatment rate.

_____	x	_____	=	_____
number of childhood pneumonia cases		proportion of all childhood pneumonia cases to be treated		number of childhood pneumonia cases to be treated

* Throughout this worksheet the terms "children" and "childhood" refer to children less than 5 years.

A-4 Of the childhood pneumonia cases to be treated, estimate the number that will be given standard case management of pneumonia (at health facilities or in the community) and the number who will be given different hospital treatments. (The total may equal more than 100% of cases since some cases will first be given standard case management of pneumonia and then be referred.)

a)	_____	x	_____	=	_____	
	number of childhood pneumonia cases to be treated		proportion of cases (2 months - 5 years) given standard antibiotics for pneumonia		cases to be given standard case management of pneumonia	
b)	_____	x	_____	=	_____	
	number of childhood pneumonia cases to be treated		proportion of cases who are young infants with severe pneumonia or very severe disease given hospital treatment		young infants with severe pneumonia or very severe disease to be given hospital treatment	
c)	_____	x	_____	=	_____	
	number of childhood pneumonia cases to be treated		proportion of cases given hospital treatment for severe pneumonia		cases of severe pneumonia to be given hospital treatment	
d)	_____	x	_____	=	_____	
	number of childhood pneumonia cases to be treated		proportion of cases given hospital treatment for very severe pneumonia		very severe pneumonia cases to be given hospital treatment	

B. ESTIMATE QUANTITIES OF DRUGS NEEDED FOR TREATING PNEUMONIA CASES

B-1 For cases (2 months up to 5 years) to be given standard case management of pneumonia, plan to provide cotrimoxazole, in pediatric tablets. The average dose for children 10-14 Kgs is 4 tablets (20 mg trimethoprim + 100 mg sulfamethoxazole) per day for 5 days, or 20 tablets for each case.

_____	x	20 tablets per case	=	_____
number of cases to be given standard case management of pneumonia				tablets of cotrimoxazole

B-2 For young infants with severe pneumonia or very severe disease, plan to provide benzyl penicillin (vials 1.0 International Units in million, average 1 vial per day, 5 vials in 5 days).

_____	x	5 vials per case	=	_____
number of young infants with severe pneumonia or very severe disease				vials of benzyl penicillin

Also plan to provide gentamicin (vials of 20 mg, 3 vials per day, 15 vials in 5 days)

_____	x	15 vials per case	=	_____
number of young infants with severe pneumonia or very severe disease				vials of gentamicin

B-3 For cases to be given hospital treatment of severe pneumonia, plan to provide benzyl penicillin (vials 1.0 International Units in million, average 1 vial per day, 5 vials in 5 days).

_____	x	5 vials per case	=	_____
number of severe pneumonia cases				vials of benzyl penicillin

B-4 For cases to be given hospital treatment for very severe pneumonia, plan to provide chloramphenicol (vial 1 g., one vial per day, 5 vials in 5 days)

_____	x	5 vials per case	=	_____
number of very severe pneumonia cases				vials of chloramphenicol

C. ESTIMATE QUANTITY OF DRUGS TO ORDER AND COST

In column b, enter the required amount of each drug estimated in B-1 - B-4. Multiply by 1.50 to increase the estimate by an amount for reserve stock (for times of unforseen use such as during epidemics and logistic breakdowns) plus an amount for wastage (due to improper storage or transport, spoilage, etc.) Record the result in column d.

To calculate cost, enter the cost per vial or tablet in column e. Then multiply column d by column e to obtain total cost.

a	b	c	d	e	f
Drug	Estimated amount needed to treat cases	Proportion added for reserve stock required (25%) and wastage (25%)	Amount to order	Cost per vial/tablet*	Total cost
cotrimoxazole pediatric tablets		x 1.50		0.008/tablet	
benzyl penicillin vials		x 1.50		0.23/vial	
gentamicin vials		x 1.50		0.08/vial	
chloramphenicol vials		x 1.50		0.12/vial	
				Total	

Talk with a facilitator when you have finished this worksheet.

* Cost for drugs obtained from UNIPAC. Prices include shipping to the country.

1.4 Plan for Supervision

Performance of health staff doing ARI case management is especially important to monitor because of the potential harm if case management is incorrect: sending home a child who has pneumonia without antibiotics is potentially dangerous. Furthermore, general overuse of antibiotics is not only costly but may hasten antibiotic resistance. There is a particular need to ensure that antibiotics are used effectively by lower level staff, especially if these staff have not provided antibiotics before.

Supervision is always needed. Every health worker should have someone to help solve problems, overcome difficulties, give feedback on the impact of his activities, and encourage him in his work. Supervision should be intensified after training to be sure that health staff can perform standard ARI case management correctly and to provide any guidance needed.

Review plans and records to be sure that every health worker has a supervisor. Then encourage supervisors to build into their schedule the time needed to do supervision.

It is often helpful to provide a supervisory checklist or worksheet to suggest important tasks that all supervisors should observe. An example is provided on the next page. However, the most important aspect of supervision is not just observing and documenting what health workers are doing. It is helping them to improve.

A supervisor may identify a task which is not done or is not done correctly because health workers do not know how. In this case, the supervisor should conduct a short demonstration and training session which includes health workers practicing the task themselves with the supervisor's guidance, as needed. This on-the-spot training can correct the problem immediately and can also make the workers appreciate what the supervisor can offer.

However, most problems cannot be corrected on-the-spot. The supervisor and health worker should agree on actions which they will both take, and these should be noted on the checklist.

In preparation for future supervisory visits, the supervisor should use the previous checklist to review the problems identified and recommendations made at that time.

Name of Health Worker _____ Date _____/_____/_____
day month year

SUPERVISORY CHECKLIST: ARI CASE MANAGEMENT

	Patient 1		Patient 2	
	Satisfactory	Unsatisfactory (explain below)	Satisfactory	Unsatisfactory (explain below)
Activities Of Health Worker:				
Assessment of all signs and symptoms	☐	☐	☐	☐
Classification of cases	☐	☐	☐	☐
Appropriate use of antibiotics to treat pneumonia	☐	☐	☐	☐
No antibiotics used unnecessarily	☐	☐	☐	☐
Use of cough or cold remedies	☐	☐	☐	☐
Instructions to mothers	☐	☐	☐	☐
Manner with mothers	☐	☐	☐	☐
Recording of treatment on patient records	☐	☐	☐	☐
Mothers Knowledge Of:				
When to bring child back to health worker	☐	☐	☐	☐
Administration of antibiotics	☐	☐	☐	☐
Logistics:	Satisfactory:		Unsatisfactory:	
Availability of antibiotics	☐		☐	

Description of problems identified, if any _____

_____

Comments (for example, work done especially well; possible reasons for unsatisfactory responses; change in performance since last time monitored) _____

_____

_____

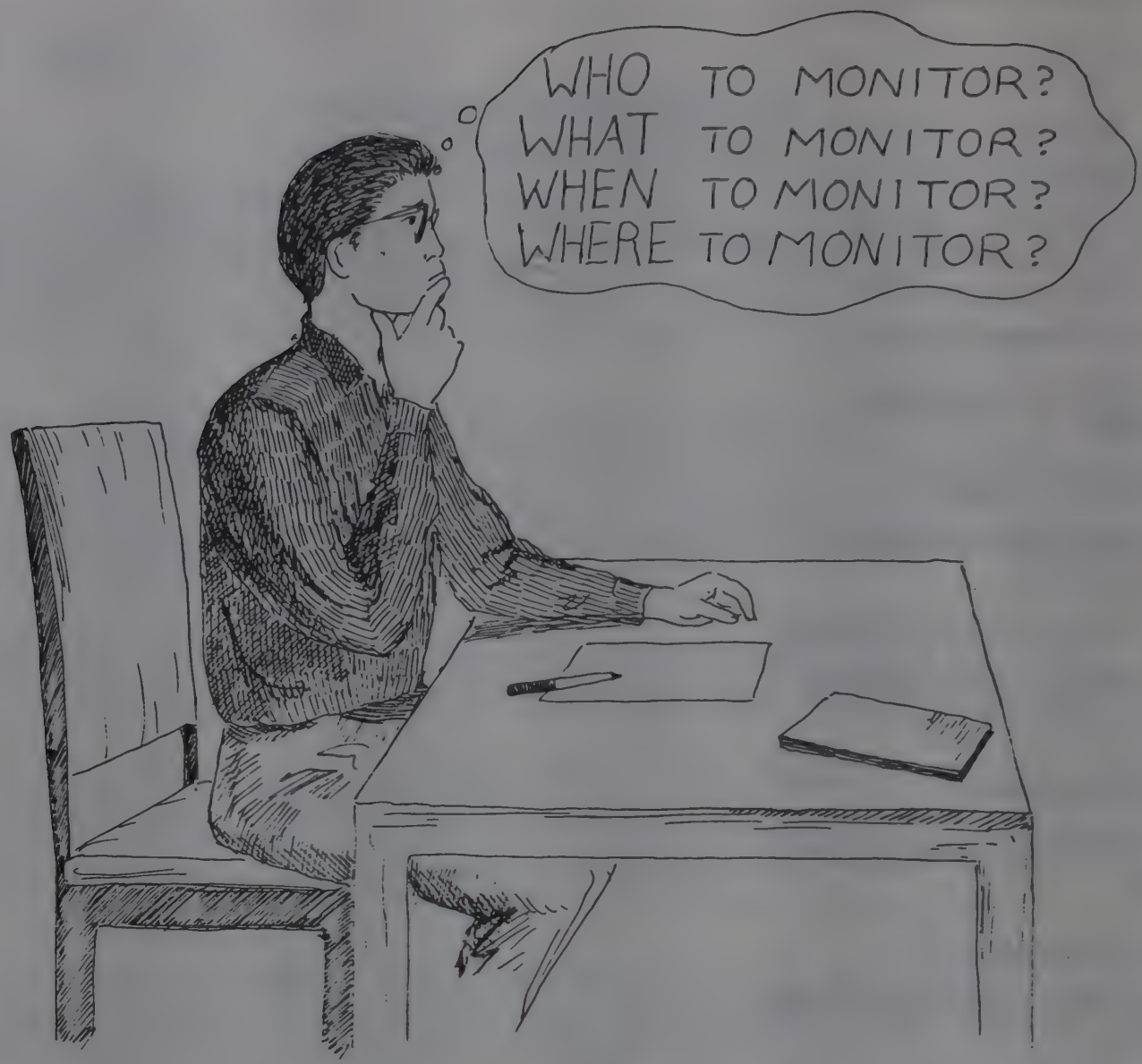
Recommendations/Actions to be taken by health worker and supervisor _____

_____

_____

Signature of Supervisor _____

Signature of Health Worker _____



2.0 PLAN FOR MONITORING

When you have specified the major activities and tasks that your programme needs to do in the next 1 - 2 years, you should plan how you will monitor whether the activities and tasks are accomplished. The goal is to identify any problems early so they can be solved without delaying the programme's progress.

Planning for monitoring involves deciding *what* activities and tasks to monitor, *who* will monitor them, and *when*, *where*, and *how* to monitor.

What to Monitor

You obviously cannot monitor every activity and task done by the programme. You must select key activities and tasks which are new or very important to the programme's success. You may decide to look at specific aspects of activities, such as the quality of work, the quantity of certain outputs, or the timeliness with which an activity is accomplished.

Since the activities of every programme will vary, the choices of what to monitor will also vary. However, most programmes will find it useful to monitor activities in the following 5 areas.

Key Areas for Monitoring:	**Examples of What to Look For:**
Distribution of Antibiotics	Whether or not there are adequate amounts of antibiotics. Given current antibiotics use rate, there should always be at least: - a 3 month supply at health facilities - a 6 month supply at regional stores - a 12 month supply at the central store Whether antibiotics are used before expiration date Whether antibiotic formulations are appropriate
Standard ARI Case Management	Quality of the following at health facilities: - assessment of cases - treatment, including use of antibiotics, if needed - advice to mother about home care
Training	Number of staff trained in standard ARI case management Number of hospital staff trained in standard case management of severe pneumonia and very severe disease Number and proportion of supervisors trained Proportion of people trained who are in the target population for the training (e.g., proportion of people attending Supervisory Skills training courses who are currently supervisors) Quality of training (the training should include practice of the tasks learners will do on the job.) Relationship of on-the-job performance to training in the areas of case management and supervision Development of training plans at regional and provincial levels

Communication	Number of pamphlets produced
	Number of community meetings
	Number of health education sessions in facilities
	Number and categories of staff who were trained in how to communicate with mothers
	Number of people interviewed who heard and understood health worker messages
	Number of people who performed the behaviour in the messages
Supervision	Number of supervisors from the regional offices who visit health facilities
	Frequency of supervisory visits
	Whether visits are on schedule
	Whether supervisors attempt during the visit to assist health workers in improving performance (e.g., on-the-spot training)
	Whether visits result in follow-up activities
	Whether visits are equitably distributed geographically among facilities
	Number of visits to facilities from national level (accompanying regional level staff)

Who Will Monitor

As the national programme manager, you will be able to directly monitor tasks for which your own staff are responsible. However, you may wish to delegate monitoring of certain tasks to others and have them report to you. For example, if you want to monitor standard ARI case management practice in a sample of health facilities, you would probably assign someone to visit those facilities and report back to you and visit a few yourself.

When and Where to Monitor

You should monitor soon enough to identify problems and solve them. For example, if a series of training sessions is to be conducted, monitor an early session so that, if necessary, improvements can be made before the later sessions are held.

Monitor in a variety of places, not just the capital city and nearby. When a region is being visited for any reason, it may be a convenient time to visit the regional store to check on antibiotic supplies, or to visit a health facility to observe case management practices.

How to Monitor

Five possible monitoring methods are described below:

Record review: Useful records to review for monitoring purposes may include training attendance reports, disease reports, treatment records, data on deaths, hospital case-fatality rates, antibiotic distribution records, project status reports, reports of supervisory visits, etc.

Observation: Observing a task is a good way to discover if it is being done well. For example, someone can observe a training course being conducted or treatment of pneumonia at a health facility. It is often helpful to have a checklist of what to look for when observing an activity.

Talking with staff: Much information can be obtained simply by asking your staff, individually or in a group, how a project is proceeding and whether there are any problems.

Focus group interviews: In these interviews a trained interviewer asks a groups of 6 -10 people a prepared list of questions on a particular topic. For example, focus groups can be useful to monitor whether printed messages or materials from health workers are understandable to mothers, and if not, why not.

Intercept interviews: These are interviews in central locations such as markets, where people are individually "intercepted" rather than interviewed in their homes. A sample of people can be interviewed about the remedies they use to treat ARI.

EXERCISE E

The ARI programme manager has written the following subtarget and listed the major new activities and tasks that his programme will need to do in the next 1 to 2 years:

Subtarget: 25% of all staff at health centres and outpatient departments of hospitals will be trained in standard ARI case management.

Activity: Adapt WHO training materials
Tasks:
- Identify staff to work with materials
- Request consultant from WHO
- Review all materials
- Modify materials as appropriate
- Print materials

Activity: Make administrative arrangements for course
Tasks:
- Choose 4 clinics as training sites and schedule courses
- Train instructors
- Invite participants
- Ship materials

Activity: Conduct training course for health staff
Tasks:
- Introduce materials
- Complete module
- Practice standard ARI case management with patients
- Discuss problems participants encountered when doing case management

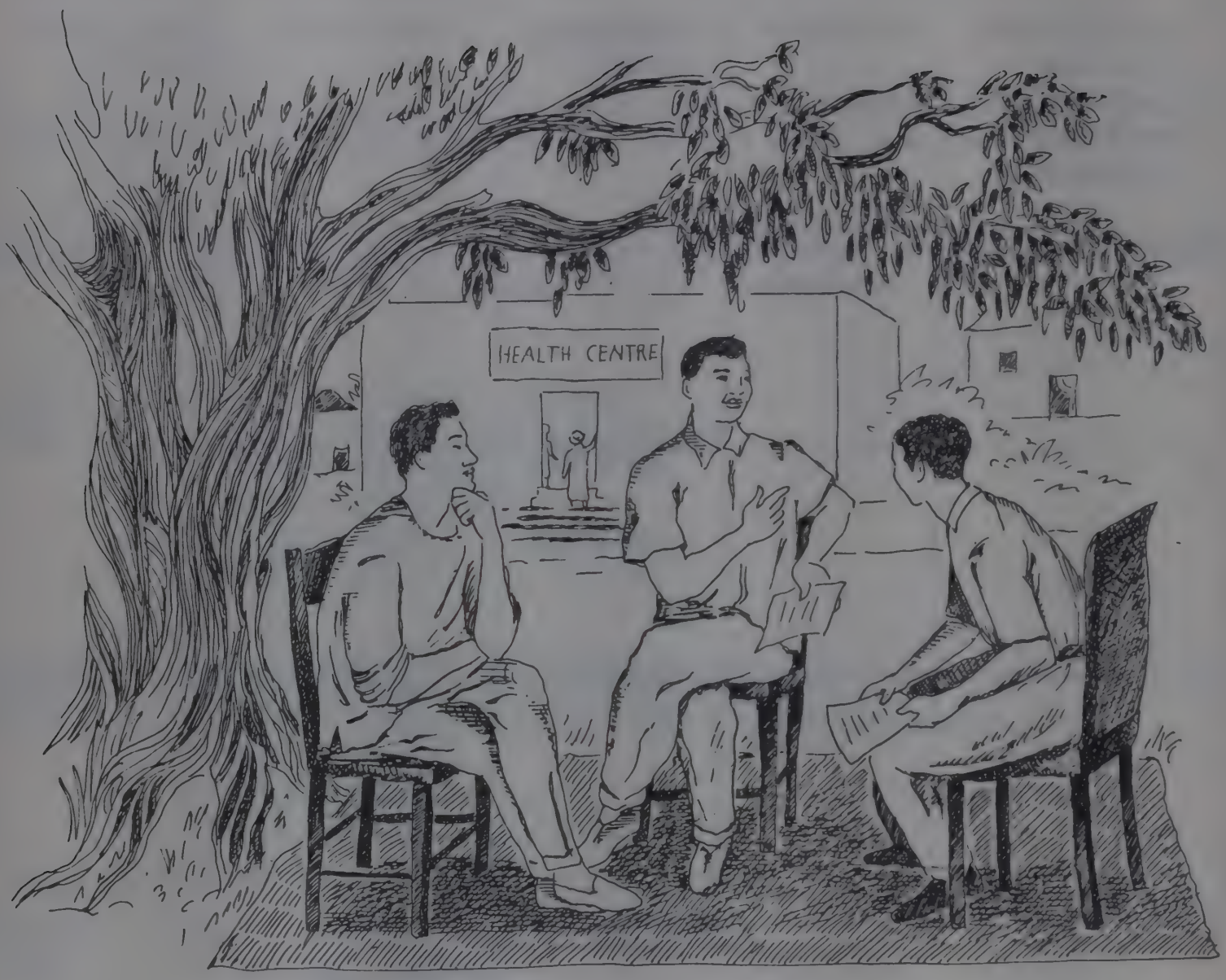
The programme manager is now ready to plan how he will monitor whether the activities and tasks are accomplished.

Instructions: Use the information provided to select 3 more important items to monitor and complete the chart below. Be prepared to discuss your answers with the group.

What To Monitor	Monitoring Methods	Who Will Monitor	When to Monitor	Where to Monitor
1. Is modification of training materials proceeding satisfactorily?	Observation	Programme manager	Once a week	Where work is being done
2.				
3.				
4.				

Tell a facilitator when you have finished this exercise.

It is often helpful to use a monitoring worksheet or checklist to keep track of observations. The following example is a checklist which could be used by national or regional staff during routine supervisory visits (e.g., to regional or district levels).


HEALTH CENTRE

EXAMPLE

CHECKLIST FOR MONITORING ARI PROGRAMME MANAGEMENT AND SUPERVISION AT REGIONAL OR DISTRICT LEVELS

Region/District: _____ Reporting Period: _____

Supervisor of Region/District: _____

Date of Visit: _____ Form Completed By: _____

SUPERVISION

Describe supervisory visits from this level to a more peripheral level during the reporting period.

Date	Location	Made by	Purpose	Problems Identified

Recommendations and follow-up actions to be taken:

TRAINING

List all ARI training courses given in the region/district in the reporting period.

Month/ Year	Type of course	Length of training (days)	Place	Category of health worker trained	Number trained

Problems and recommendations:

Planned training activities:

ARI HEALTH EDUCATION AND COMMUNICATION

Describe key activities, including messages, audiences, materials, and media for health education and communication during the reporting period. Also, describe results of any evaluation of changes in knowledge, beliefs, and practices. (Only describe activities specific to the region.)

DRUG SUPPLY / DISTRIBUTION / STORAGE

Have there been shortages or other problems with supply and distribution of antibiotics during the reporting period? If yes, describe.

Are the drugs in stock stored appropriately and in good condition? If not, describe.

CONCLUSIONS / FUTURE ACTIONS PLANNED

Together with the supervisor, agree on major achievements and problems identified and follow-up actions to be taken:

Additional comments or observations which you feel may be useful:

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EXERCISE F

Answer the following questions.

1. Could you use the "Supervisory Checklist: ARI Case Management" (page 41) and the "Checklist for Monitoring ARI Programme Management and Supervision at Regional or District Levels" (pages 49-51)? What modifications would you make, if any?

2. What is the most important activity you would monitor in your country during the next year? Why did you choose this activity? Who could monitor it? When, where and how would it be monitored?

3. Do you use supervisory checklists at regional, district, or lower levels in your country? If you do, what problems have you experienced in using them?

When you have finished this exercise, talk with a facilitator.

3.0 SET A TIMETABLE FOR ACTIVITIES

Once you have specified the activities necessary to achieve subtargets, and you have decided how to monitor those activities, you can set a timetable to remind you *when* activities should be accomplished and *when* to monitor.

Make the timetable for a one-year period. Include enough detail so that the timetable will be useful to you as a reminder of major activities and monitoring to be done.

Many factors may affect the scheduling of activities. A few examples are listed below:

- Training for staff must occur rapidly after antibiotics are provided or new treatment guidelines are adopted. Training sessions must be scheduled to last long enough that participants can assess and treat pneumonia cases and advise their mothers during the training.

- When staff return to their jobs after they are trained, they must continue practicing what they have learned. Otherwise, they will quickly forget. Thus, appropriate antibiotics must be made available in areas where staff are being trained to provide them.

- It may be most effective to intensify communication efforts just before and during the peak pneumonia season. People will listen and learn better when the message is one they need *at the time*.

- When ARI staff travel around the country for any reason, it may be a good opportunity to visit health facilities and observe case management.

EXAMPLE

The next page shows a timetable developed by the manager of an ARI programme which is emphasizing activities to increase access to standard ARI case management by training and supplying all health facilities (stage 1). The manager has indicated with an asterisk (*) whenever monitoring will be done. (The headings in the left column of a timetable under "Type of Activity" may change as programme activities change.)

TIMETABLE FOR 1991

Type of Activity	January	February	March	April	May	June	July	August	September	October	November	December
Case Management Training	Adapt WHO Treatment module		Test adapted module	Training Course Areas 1+2 *		Training Course Areas 3+4 *		Training Course Areas 5+6 *		Training Course Areas 1+2		Training Course Areas 3+4
Drug Distribution	EDP should have received all antibiotics	Ship to Areas 1+2	Assure arrival of antibiotics	Ship to Areas 3+4	Monitor drug supplies with EDP *	Ship to Areas 5+6	Place order with EDP for 1992	Ship to Areas 1+2		Ship to Areas 3+4	Monitor drug supplies with EDP *	Ship to Areas 5+6
Monitoring Case Management		Develop monitoring checklist	Test checklist			Visit Area 1	Visit Area 2 *	Visit Area 3	Visit Area 4	Visit Area 5 *	Visit Area 6	Analyze results of visits
Communication	Begin designing messages for advising mothers	Test messages	Complete message design *	Include in staff training			Assess staff advice to mothers *	Modify message design if necessary			Assess staff advice to mothers *	
Planning					Draft plan & budget for 1992	Discuss plan & budget in MOH		Finalize plan & budget for 1992				
Evaluation			Analyze indicators	Prepare 1990 Annual Report	Coordinate Household Surveys *	Coordinate Facility Surveys *	Estimate 1991 indicator trends		Request all Areas to submit 1991 report			
Other												

SHORT-ANSWER EXERCISE

Refer to the timetable on the previous page to answer the following questions.

1. How often is someone from the national level scheduled to monitor drug supplies with the Essential Drugs Programme?

2. In what month will training in standard ARI case management be held in areas 3 and 4? In what month will new antibiotic supplies be shipped to areas 3 and 4? Why do you think the schedule is this way?

3. If the design of communication messages for advising mothers is delayed several months, what will be the consequence for the training activities?

Answers:

1. Twice a year.

2. Case management training sessions for areas 3 and 4 are scheduled for June. The shipment of antibiotics there is scheduled for April. This scheduling ensures the antibiotics can be distributed to health centres shortly before the training and will be available to use as soon as staff are trained.

3. If the message design is delayed, the health staff trained will not learn what to advise mothers. They will need to be retrained later.

4.0 PREPARE A NATIONAL PLAN FOR THE ARI PROGRAMME

Usually a national plan describes the current situation as regards ARI and what the programme proposes to do. It involves the programme's objectives, strategies, policies, and targets. It outlines plans for training, drug supply, monitoring and evaluation. It also sets a timetable for activities and a budget. A possible outline follows.

CONTENT OF A NATIONAL PLAN FOR AN ARI PROGRAMME

A. Introduction

1. Basic demographic data of the country
2. Overall health situation
3. Overall health structure

B. Assessment of the current situation

1. Description of the ARI problem and past efforts to solve it
2. Results of an assessment of the knowledge, beliefs and practices of families about ARI
3. Results of an assessment of the ARI knowledge, beliefs and practices of possible providers of standard ARI case management
4. The current pattern of antibiotic sensitivity of the pneumococcus and *H. influenzae* (or the plan to determine this)
5. The activities of other programmes that are relevant to ARI

C. Objectives and strategy of the ARI programme

1. Objectives of the national ARI programme
2. Strategy of the programme
3. Important dates for planning, implementation and geographical expansion of the programme

D. Policies of the programme

1. The stages of the programme in terms of case management and the planned emphasis of programme activities

2. Statement of the programme's policies

E. Standard ARI case management guidelines

F. Targets and subtargets

1. Subtargets addressing access and use of standard ARI case management (appropriate for the stage of the programme)

2. A national target for reduction of pneumonia mortality

G. Activities and coordination with other programmes

1. Training plans:

- categories of workers to be trained
- number in each category
- how they will be trained
- methods and materials to be used

2. Communication plans

3. Drug and equipment requirements:

- drugs and other items needed for hospitals
- drugs and other items needed for health facilities
- amounts of drugs for an initial order

4. Plans for drug procurement and distribution (in coordination with Essential Drug Programme's current system)

5. Plans for supervision of the performance of health workers to ensure safety and effectiveness

6. Plans for surveillance of antibiotic sensitivity of the pneumococcus and *H. influenzae*

7. Plans for monitoring the accomplishment of programme activities

8. Key indicators to be evaluated

9. Additional baseline data collection planned (to supplement information in items B1-5 of plan)

10. Data collection methods planned with specific details (e.g., end of year household surveys, 5 health facility surveys 3 months after training, routine reporting of ARI cases treated by health facilities, special study of case-fatality rates in hospitals)

H. Timetable for activities (including monitoring and evaluation)

I. Budget for the programme

- salaries of national staff
- national office operating costs
- drugs and equipment
- training courses (per diems, travel, other expenses)
- travel and per diems for supervision
- printing
- laboratory costs (for salaries, rent and equipment) or cost to contract out monitoring antibiotic sensitivity
- surveys (such as ethnographic studies, evaluation surveys)

EXERCISE G

Examine the outline of a national plan for an ARI programme (pages 57-59). Then answer the following questions:

1. Is there a national plan written for your ARI programme? If not, do you think it would be good to develop one? Why or why not?

2. If there is a plan, does it cover all the points in the example outline? Should it? Does it include different information?

3. If the plan is not complete, what additional information or support would the programme need to complete it? How can you get this information or support?

When you have finished this exercise, talk with a facilitator.

5.0 MONITOR THE PROGRAMME'S ACTIVITIES

It is essential to monitor the quality of case management of ARI at all levels of the health system. Review reports from regular supervision and reports from periodic spot-checks by regional and district staff.

If the antibiotics available in health facilities or hospitals are different from what health staff have been trained to use to treat pneumonia, you must take action to ensure that the available drugs will be used appropriately.

Also monitor whether activities which were planned are being accomplished. For example, monitor whether training is being carried out on schedule and is using the training methods planned.

When you monitor programme activities, you will probably find that many are being done well and as scheduled, but you will also find problems. To solve these problems, you will need to find their causes.

****
Remember: Look for the CAUSE of a problem before jumping to a solution.
****

Suppose you were asked, "What are the problems in the ARI programme? Some possible answers might be:

* There is not enough money.

* Children are dying from pneumonia.

* We do not have the drugs and equipment we need.

* Mothers do not understand when to bring a child with ARI to the health worker.

All of these are problems. This section will describe how to analyze and solve certain types of problems, called "performance problems." You are likely to identify performance problems when using supervisory or monitoring checklists.

A performance problem is the difference between what **should be done** by a person or group of people and what is **actually being done**. For example, all of the following are performance problems:

* Mothers do not administer antibiotics correctly at home.

* Health workers are not teaching mothers about home care.

* Health centre staff are not correctly recording data, and are leaving many entries blank.

You see that all of the above problems are stated in the following way:

_____ does not _____ .
(someone or some group) (do something correctly)

You may ask, "But what about the other problems in my health area?" Many of them can probably be traced to performance problems. For example, suppose that a region never has enough antibiotics for treating pneumonia. That does not sound like a performance problem. However, if a manager investigates thoroughly, he may find any one of the following situations:

* Regional staff from the Essential Drugs Programme are not ordering the amount of antibiotics needed.

* Staff at the central supply store do not send the amounts of antibiotics requested.

* Health workers do not limit the use of antibiotics to children that need them but give them also to children with only coughs or colds, so the antibiotic supply is depleted quickly.

If you can state problems as performance problems, they will easier to analyze and solve. Below are steps to identify possible causes of problems and reasonable solutions.

DESCRIBE THE PROBLEM

The more precisely you describe a performance problem, the easier it will be to find the correct solution. To describe a performance problem precisely, try to answer as many of the following questions as possible:

* Where does the problem occur?

* With whom does the problem occur? Does it occur with certain types of health workers or health facilities? Does it occur with supervisors?

* When and how often does the problem occur?

* When did the problem start occurring?

IDENTIFY POSSIBLE CAUSES

After a performance problem has been identified and described, a solution to it must be found. This requires knowing what is **causing** the problem.

To discover the causes of the problem, consider questions such as:

* Has the responsibility or task been clearly assigned to the health staff?

* Do the staff lack skill or knowledge to do the work?

* Do the staff want to do the work? Do they know how to do it but not want to do it (that is, do they lack motivation)?

* Are there obstacles preventing them from doing the work correctly, such as lack of time, lack of authority to do the job, lack of money, barriers such as lack of necessary materials, geographic location?

IDENTIFY AND IMPLEMENT A REASONABLE SOLUTION

Solutions to performance problems will depend on the causes identified. The solutions selected should:

* remove the cause of the problem (or reduce its effects as much as possible),

* be affordable,

* not create a problem in delivery of another health service, and

* be realistic.

In Annex F at the back of this module is a chart which summarizes the problem-solving process. Fold out the chart now and review it briefly.

Keep a written record of the results of your monitoring efforts. The results will help you determine if solutions are working. Monitoring results will give information useful for assessing indicators and may help explain the results of evaluation at the end of the year. Also give feedback to staff at different levels on the results of monitoring.

EXERCISE H

The following table shows some examples of problems that may occur in a programme, some possible causes, and solutions appropriate for those causes. Read the examples (a, b, and c). Then, ***for problem d,*** suggest possible solutions based on the causes given. ***For problem e,*** think of 2 possible causes as well as solutions. In the space ***for problem f,*** list a problem that you know has occurred in your programme or another ARI programme, and describe the possible causes and solutions. Be prepared to discuss your answers with the rest of the group.

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
a. Physicians continue to prescribe antibiotics for coughs or colds. (do not limit use to pneumonia cases)	The public asks for these drugs and physicians do not like to refuse. (lack of motivation)	Educate families about home care of ARI and that antibiotics will not help treat a cold. Teach mothers when they visit a health facility. Teach families through channels that reach more people, such as mass media channels.
	Physicians are not convinced that antibiotics are not needed for coughs or colds. (lack of knowledge)	Arrange professional conferences and training for physicians on standard ARI case management and the dangers of overuse of antibiotics.
	Physicians feel their status depends on giving drugs which require prescriptions. (lack of motivation)	
	Physicians do not want to change what they have always done. (lack of motivation)	
	Inappropriate drugs are still available in government health facilities. (lack of motivation)	Remove inappropriate drugs from government health facilities.
	Pharmaceutical companies have vigorously promoted these drugs. (lack of motivation)	Limit or ban the production, importation, and sales of these drugs in the country.
b. Supervisors of local health areas are not making supervisory visits to community health workers.	There is no incentive to make these visits; no one seems to notice if they are made or not. (lack of motivation)	Have regional staff ask supervisors for records of supervisory visits and give them appropriate feedback.
	There is not enough time for supervisors to make these visits. (obstacle)	Allow the supervisors to send an assistant to make the visits. Or change the system so that community health workers regularly visit the supervisor for supplies, information and refresher training.

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
c. Almost all the programme's activities are behind schedule.	The schedule was overly ambitious for the programme's resources. (obstacles)	Revise the schedule to be more realistic, and/or try to get more resources.
d. Case management at health facilities is not done well.	Training of staff was mostly lecture with very little practice treating patients. (lack of skill)	
	Supervisors were trained, but their staff were not. (lack of skill and knowledge)	
e. Mothers are not bringing their children soon enough when they have difficult or rapid breathing.		
f.		

Talk to a facilitator when you are ready for the group discussion.

REMEMBER THIS

ABOUT PLANNING AND MONITORING ACTIVITIES

* Planning ARI programme activities will help you and your staff know what to do to make the necessary progress towards subtargets and the target.

* Important activities to plan for an ARI programme include:

  -- Training

  -- Communication

  -- Distribution of drugs and supplies

  -- Supervision

* Monitoring activities will help you to follow the programme's progress, and to identify and solve many problems early, before they cause delays.

* Select activities to monitor which are new or very important to the programme's success.

* Once you know which activities to monitor, then decide who will monitor the activities and where, when, and how to monitor them.

* Timetables will help you remember when activities should be accomplished and when to monitor. Monitoring checklists will help you remember what to look for in monitoring.

* To find solutions to problems identified in monitoring, first find the *causes* of the problems.

* Give feedback to staff on the findings of monitoring.

ANNEXES

A: Worksheet for Planning Training

B: Worksheet for Estimating Drug Needs For Treating Pneumonia

C: Supervisory Checklist: ARI Case Management

D: Checklist for Monitoring Programme Management and Supervision at Regional or District Levels

E: Timetable

F: Problem Solving Checklist

WORKSHEET

ESTIMATING DRUG NEEDS AND COSTS FOR TREATING PNEUMONIA

A. ESTIMATE THE NUMBER OF CHILDHOOD PNEUMONIA CASES OF ALL DEGREES OF SEVERITY TO BE GIVEN TREATMENT

(includes cases of pneumonia, severe pneumonia, very severe pneumonia, and young infants with pneumonia or very severe disease)

A-1 Estimate the number of children under 5 years.

_____	x	_____	=	_____
population of the country		proportion of the population under 5 years		number of children in the country*

A-2 Estimate the expected cases of pneumonia.

_____	x	_____	=	_____
number of children in the country		incidence of pneumonia in children		number of childhood pneumonia cases

A-3 Estimate the number of childhood pneumonia cases who will be treated at a health facility, hospital, or by a community-based practitioner. Use the overall pneumonia treatment rate.

_____	x	_____	=	_____
number of childhood pneumonia cases		proportion of all childhood pneumonia cases to be treated		number of childhood pneumonia cases to be treated

* Throughout this worksheet the terms "children" and "childhood" refer to children less than 5 years.

A-4 Of the childhood pneumonia cases to be treated, estimate the number that will be given standard case management of pneumonia (at health facilities or in the community) and the number who will be given different hospital treatments. (The total may equal more than 100% of cases since some cases will first be given standard case management of pneumonia and then be referred.)

a)	_____ number of childhood pneumonia cases to be treated	x	_____ proportion of cases (2 months - 5 years) given standard antibiotics for pneumonia	=	_____ cases to be given standard case management of pneumonia
b)	_____ number of childhood pneumonia cases to be treated	x	_____ proportion of cases who are young infants with severe pneumonia or very severe disease given hospital treatment	=	_____ young infants with severe pneumonia or very severe disease to be given hospital treatment
c)	_____ number of childhood pneumonia cases to be treated	x	_____ proportion of cases given hospital treatment for severe pneumonia	=	_____ cases of severe pneumonia to be given hospital treatment
d)	_____ number of childhood pneumonia cases to be treated	x	_____ proportion of cases given hospital treatment for very severe pneumonia	=	_____ very severe pneumonia cases to be given hospital treatment

B. ESTIMATE QUANTITIES OF DRUGS NEEDED FOR TREATING PNEUMONIA CASES

B-1 For cases (2 months up to 5 years) to be given standard case management of pneumonia, plan to provide cotrimoxazole, in pediatric tablets. The average dose for children 10-14 Kgs is 4 tablets (20 mg trimethoprim + 100 mg sulfamethoxazole) per day for 5 days, or 20 tablets for each case.

_____ number of cases to be given standard case management of pneumonia	x	20 tablets per case	=	_____ tablets of cotrimoxazole

B-2 For young infants with severe pneumonia or very severe disease, plan to provide benzyl penicillin (vials 1.0 International Units in million, average 1 vial per day, 5 vials in 5 days).

_____	x	5 vials per case	=	_____
number of young infants with severe pneumonia or very severe disease				vials of benzyl penicillin

Also plan to provide gentamicin (vials of 20 mg, 3 vials per day, 15 vials in 5 days)

_____	x	15 vials per case	=	_____
number of young infants with severe pneumonia or very severe disease				vials of gentamicin

B-3 For cases to be given hospital treatment of severe pneumonia, plan to provide benzyl penicillin (vials 1.0 International Units in million, average 1 vial per day, 5 vials in 5 days).

_____	x	5 vials per case	=	_____
number of severe pneumonia cases				vials of benzyl penicillin

B-4 For cases to be given hospital treatment for very severe pneumonia, plan to provide chloramphenicol (vial 1 g., one vial per day, 5 vials in 5 days)

_____	x	5 vials per case	=	_____
number of very severe pneumonia cases				vials of chloramphenicol

C. ESTIMATE QUANTITY OF DRUGS TO ORDER AND COST

In column b, enter the required amount of each drug estimated in B-1 - B-4. Multiply by 1.50 to increase the estimate by an amount for reserve stock (for times of unforseen use such as during epidemics and logistic breakdowns) plus an amount for wastage (due to improper storage or transport, spoilage, etc.) Record the result in column d.

To calculate cost, enter the cost per vial or tablet in column e. Then multiply column d by column e to obtain total cost.

a	b	c	d	e	f
Drug	Estimated amount needed to treat cases	Proportion added for reserve stock required (25%) and wastage (25%)	Amount to order	Cost per vial/tablet*	Total cost
cotrimoxazole pediatric tablets		x 1.50		0.008/tablet	
benzyl penicillin vials		x 1.50		0.23/vial	
gentamicin vials		x 1.50		0.08/vial	
chloramphenicol vials		x 1.50		0.12/vial	
				Total	

* Cost for drugs obtained from UNIPAC. Prices include shipping to the country.

Name of Health Worker _____ Date _____/_____/_____
day month year

SUPERVISORY CHECKLIST: ARI CASE MANAGEMENT

	Patient 1		Patient 2	
	Satisfactory	Unsatisfactory (explain below)	Satisfactory	Unsatisfactory (explain below)
Activities Of Health Worker:				
Assessment of all signs and symptoms	☐	☐	☐	☐
Classification of cases	☐	☐	☐	☐
Appropriate use of antibiotics to treat pneumonia	☐	☐	☐	☐
No antibiotics used unnecessarily	☐	☐	☐	☐
Use of cough or cold remedies	☐	☐	☐	☐
Instructions to mothers	☐	☐	☐	☐
Manner with mothers	☐	☐	☐	☐
Recording of treatment on patient records	☐	☐	☐	☐
Mothers Knowledge Of:				
When to bring child back to health worker	☐	☐	☐	☐
Administration of antibiotics	☐	☐	☐	☐

Logistics:	Satisfactory:	Unsatisfactory:
Availability of antibiotics	☐	☐

Description of problems identified, if any _____

_____

Comments (for example, work done especially well; possible reasons for unsatisfactory responses; change in performance since last time monitored) _____

_____

_____

Recommendations/Actions to be taken by health worker and supervisor _____

_____

_____

Signature of Supervisor _____

Signature of Health Worker _____

ANNEX D

EXAMPLE
CHECKLIST FOR MONITORING ARI PROGRAMME MANAGEMENT AND SUPERVISION AT REGIONAL OR DISTRICT LEVELS

Region/District: _____ Reporting Period: _____

Supervisor of Region/District: _____

Date of Visit: _____ Form Completed By: _____

SUPERVISION

Describe supervisory visits from this level to a more peripheral level during the reporting period.

Date	Location	Made by	Purpose	Problems Identified

Recommendations and follow-up actions to be taken:

TRAINING

List all ARI training courses given in the region/district in the reporting period.

Month/ Year	Type of course	Length of training (days)	Place	Category of health worker trained	Number trained

Problems and recommendations:

Planned training activities:

ARI HEALTH EDUCATION AND COMMUNICATION

Describe key activities, including messages, audiences, materials, and media for health education and communication during the reporting period. Also, describe results of any evaluation of changes in knowledge, beliefs, and practices. (Only describe activities specific to the region.)

DRUG SUPPLY / DISTRIBUTION / STORAGE

Have there been shortages or other problems with supply and distribution of antibiotics during the reporting period? If yes, describe.

Are the drugs in stock stored appropriately and in good condition? If not, describe.

CONCLUSIONS / FUTURE ACTIONS PLANNED

Together with the supervisor, agree on major achievements and problems identified and follow-up actions to be taken:

Additional comments or observations which you feel may be useful:

TIMETABLE FOR 19__

Type of Activity	January	February	March	April	May	June	July	August	September	October	November	December
Case Management Training												
Drug Distribution												
Monitoring Case Management												
Communication												
Planning												
Evaluation												
Other												